



# SAFETY DATA SHEET

Version 1

## 1. Identification of the Substance / Preparation and of the Company / Undertaking

**Product Name:** Sodium Hydroxide 30-50%  
**UN/ID No** UN1824  
**Synonyms:** Sodium Hydroxide; Caustic; Caustic Soda; Lye; Sodium Hydrate; Caustic Soda Membrane Grade 50%; Caustic Soda Diaphragm 30%, 35%, 40%, 50%  
**Molecular Weight:** 40

**Company Name:**  
Vertex Chemical Corporation, 11685 Manchester Road, St. Louis, Missouri 63131. (314) 471-0500

**Emergency Telephone:**  
NATIONAL EMERGENCY RESPONSE CENTER:  
1-800-424-8802  
VERTEX CHEMICAL CORPORATION 314-471-0500  
CHEMTREC (US): 1-800-424-9300  
Call CHEMTREC only in the event of chemical emergencies involving a SPILL, LEAK, FIRE, EXPOSURE, or ACCIDENT involving chemicals.

**Email:**  
vertexchem@vertexchem.com  
www.vertexchemical.com

## 2. Hazards Identification

### GHS - Classification

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Category 1A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 1



**Signal Word:** Danger

**Hazard Statements:**  
• Harmful if swallowed  
• Causes severe skin burns and eye damage  
• Causes damage to organs

### Physical Hazards

Corrosive to metals	Category 1
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- May be corrosive to metals



**Precautionary Statements:**

- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- P330 - Rinse mouth
- P312 - Call a POISON CENTER or doctor if you feel unwell
- P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- P363 - Wash contaminated clothing before reuse
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor/physician
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P307 + P311 - IF exposed: Call a POISON CENTER or doctor/physician
- P405 - Store locked up
- P501 - Dispose of contents/ container to an approved waste disposal plant
- P334 - Immerse in cool water/wrap in wet bandages
- P390 - Absorb spillage to prevent material damage
- P406 - Store in corrosive resistant aluminum container with a resistant inliner

**3. Composition / Information on Ingredients**

**Hazardous**

Chemical Name	CAS No	Weight-%	EC No
Caustic soda	1310-73-2	30-50	215-185-5
Sodium chloride	7647-14-5	< 1.0	231-598-3
Sodium carbonate	497-19-8	< 0.2	207-838-8

**Non-Hazardous**

Chemical Name	CAS No	Weight-%	EC No
Water	7732-18-5	Balance	231-791-2

**4. First Aid Measures**

- General Advice:** Immediate medical attention is required.
- Eye Contact:** Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.
- Skin Contact:** Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
- Inhalation:** Move to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

## 37721 Sodium Hydroxide 30-50%

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**Ingestion:** Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.

**Note to Physicians:** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

**Self-protection of the First Aider:** Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

### 5. Fire-fighting Measures

**Flammable Properties:**  
Not considered to be a fire hazard

**Explosive Properties:**  
No information available

**Suitable Extinguishing Media:**  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

**Unsuitable Extinguishing Media:**  
No information available

**Specific Hazards Arising from the Chemical:**  
The product causes burns of eyes, skin and mucous membranes; Thermal decomposition can lead to release of irritating and toxic gases and vapors; In the event of fire and/or explosion do not breathe fumes

**Protective Equipment and Precautions for Firefighters:**  
In the event of a fire, wear full protective clothing and MSHA/NIOSH (approved or equivalent) self-contained breathing apparatus with full facepiece operated in the pressure-demand or other positive pressure mode

### 6. Accidental Release Measures

**Personal Precautions:** Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

**Environmental Precautions:** Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**Methods for Cleaning Up:** Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

**Other Information:** Not applicable.

### 7. Handling and Storage

**Advice on Safe Handling:** Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

**Storage Conditions:** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

**Incompatible Materials:** Strong acids and bases; Oxidizing agents

## 8. Exposure Controls / Personal Protection

Chemical Name		ACGIH TLV		OSHA PEL		Ontario TWA
Caustic soda		Ceiling: 2 mg/m <sup>3</sup>		2 mg/m <sup>3</sup> Ceiling 2 mg/m <sup>3</sup> TWA		CEV: 2 mg/m <sup>3</sup>
Chemical Name	European Union	China	Japan	Korea	Australia	Taiwan
Caustic soda		Ceiling: 2 mg/m <sup>3</sup> Ceiling	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup> Peak	TWA: 2 mg/m <sup>3</sup>

**Exposure Guidelines** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

**Engineering Controls:** Ensure adequate ventilation, especially in confined areas

### Personal protective equipment (PPE)

**Eye/Face Protection:** Tight sealing safety goggles. Face protection shield.

**Body Protection:** Gloves made of plastic or rubber. Rubber boots. Suitable protective clothing. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate.

### General Hygiene Considerations:

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

<b>Physical State:</b>	Liquid	<b>Odor:</b>	Odorless
<b>Appearance:</b>	No information available	<b>Odor Threshold:</b>	No information available
<b>Color:</b>	Colorless		
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>	
<b>pH:</b>	14	No information available	
<b>"Salt Out" Point (°F):</b>		No information available	
<b>Melting Point/Freezing Point:</b>	14 °C / 57 °F		
<b>Boiling Point/Boiling Range:</b>	145 °C / 293 °F		
<b>Flash Point:</b>		No information available	
<b>Evaporation Rate (BuAc=1):</b>		No information available	
<b>Flammability (solid, gas):</b>		No information available	
<b>Flammability Limits in Air:</b>		No information available	
<b>Upper Flammability Limit:</b>			
<b>Lower Flammability Limit:</b>			
<b>Vapor Pressure (mm Hg) :</b>		No information available	
<b>Vapor density (Air =1)</b>		No information available	
<b>Specific Gravity (H2O=1):</b>	1.54		
<b>Specific Gravity (2nd value):</b>			
<b>Water Solubility:</b>		No information available	
<b>Solubility(ies):</b>		No information available	
<b>Partition Coefficient (n-octanol/water)</b>		No information available	
<b>Autoignition Temperature:</b>		No information available	
<b>Decomposition Temperature:</b>		No information available	
<b>Kinematic Viscosity:</b>		No information available	
<b>Dynamic Viscosity:</b>		No information available	
<b>Oxidizing Properties:</b>	No information available		
<b>Explosive Properties:</b>	No information available		

**9.2. Other information**

<b>Softening Point:</b>	No information available
<b>Molecular Weight:</b>	40
<b>VOC Content(%):</b>	No information available
<b>Density:</b>	No information available
<b>Bulk Density:</b>	No information available

**10. Stability and Reactivity**

<b>Stability:</b>	Stable under normal conditions of use and storage
<b>Conditions to Avoid:</b>	Exposure to air or moisture over prolonged periods
<b>Incompatible Materials:</b>	Strong acids and bases; Oxidizing agents
<b>Hazardous Decomposition Products:</b>	Thermal decomposition can lead to release of irritating and toxic gases and vapors
<b>Possibility of Hazardous Reactions:</b>	None under normal processing

**11. Toxicological Information****Product Information**

**Acute Toxicity:** 0% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

Chemical Name	Oral LD <sub>50</sub> :	Dermal LD <sub>50</sub> :	LC <sub>50</sub> (Lethal Concentration):
Caustic soda		1350 mg/kg ( Rabbit )	
Sodium chloride	3 g/kg ( Rat )	10 g/kg ( Rabbit )	42 g/m <sup>3</sup> ( Rat ) 1 h
Sodium carbonate	4090 mg/kg ( Rat )		
Water	90 mL/kg ( Rat )		

**Chronic Toxicity:**

**Carcinogenicity:** This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP

**Target Organ Effects:** Eyes, Respiratory system, Skin

**12. Ecological Information****Ecotoxicity**

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Caustic soda		45.4: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static	

**37721 Sodium Hydroxide 30-50%**

Sodium chloride		5560 - 6080: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 6020 - 7070: 96 h <i>Pimephales promelas</i> mg/L LC50 static 12946: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 7050: 96 h <i>Pimephales promelas</i> mg/L LC50 semi-static 6420 - 6700: 96 h <i>Pimephales promelas</i> mg/L LC50 static 4747 - 7824: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through	1000: 48 h <i>Daphnia magna</i> mg/L EC50 340.7 - 469.2: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Sodium carbonate	242: 120 h <i>Nitzschia</i> mg/L EC50	300: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 310 - 1220: 96 h <i>Pimephales promelas</i> mg/L LC50 static	265: 48 h <i>Daphnia magna</i> mg/L EC50

**Persistence and Degradability:** No information available.

**Bioaccumulation:** No information available.

**Mobility:** No information available.

**13. Disposal Considerations**

**Waste from Residues/Unused Products:** Disposal should be in accordance with applicable regional, national and local laws and regulations

**Contaminated Packaging:** Do not reuse container.

**14. Transport Information**

IATA

DOT

**Proper shipping name** SODIUM HYDROXIDE SOLUTION  
**Hazard Class** 8  
**UN/ID No** UN1824  
**Packing Group** PG II  
**Reportable Quantity (RQ)** 1000 lbs  
**Description** UN1824, SODIUM HYDROXIDE SOLUTION, 8, PG II



TDG

MEX

**15. Regulatory Information**

International Inventories

## 37721 Sodium Hydroxide 30-50%

All of the components in the product are on the following Inventory lists: TSCA (United States);, Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), South Korea (KECL);, China (IECSC), Philippines (PICCS), This product contains a substance not listed on international inventories - it is for research and development use only.

AICS	Complies
TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	-
IECSC	Complies
KECL	Complies
PICCS	Complies

Chemical Name	AICS	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Caustic soda	Listed	Listed	Listed	-	Listed	-	(2)-1972 (1)-410	Listed	KE-31487	Listed
Sodium chloride	Listed	Listed	Listed	-	Listed	-	(1)-236	Listed	KE-31387	Present
Sodium carbonate	Listed	Listed	Listed	-	Listed	-	(1)-164	Listed	KE-31380	Present
Water	Listed	Listed	Listed	-	Listed	-	-	Listed	KE-35400	Present

### Inventory Legend

AICS - Australian Inventory of Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

**RESTRICTIONS - REACH TITLE VII** No information available

### US Federal Regulations

#### CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	CERCLA Hazardous Substances and the Reportable Quantities	SARA Extremely Hazardous Substances EPCRA RQ	SARA Extremely Hazardous Substances TPQ
Caustic soda	1000 lb 454 kg	-	-

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	Yes

### U.S. State Right-to-Know Regulations

## 37721 Sodium Hydroxide 30-50%

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### California Proposition 65:

This product does not contain any Proposition 65 chemicals

## 16. Other Information

### National Fire Protection Association (NFPA) Ratings



### NSF Certification



Certified to  
NSF/ANSI 60

**Maximum Use (mg/L unless otherwise indicated):** 100

**Prepared By:** Adam Peterson, Rob Kelley, Andrew Morabu and Todd Bain from the HSE department.

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**Revision Date:** 08-Jan-2013

**Revision Note:** MSDS converted to GHS SDS Format.

### **Disclaimer:**

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**End of Safety Data Sheet**